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Maj. Gen. Doesburg Briefs Reporters on Chem Bio Defense

Washington, D.C. — Maj. Gen. John Doesburg, Research, Development and Engineering Command transition director, recently participated in a Pentagon briefing to national and international media. During the briefing, Maj. Gen. Doesburg discussed some of the protective gear and detection equipment that was deployed in support of Operation Iraqi Freedom. Soldiers modeled the latest protective suits that will be issued to all deploying troops. Col. Thomas W. Spoehr, commander of the 3rd Chemical Brigade, U.S. Army Chemical School, and Brig. Gen. Stephen Reeves, Department of Defense program executive officer for chemical and biological defense, joined Maj. Gen. Doesburg for the briefing.



Maj. Gen. John Doesburg, RDECOM transition director, briefs reporters on protective gear and detection equipment deployed in support of Operation Iraqi Freedom. **Photo by R.D. Ward.**

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Command Post Shelters Get Spacious

*By Curt Biberdorf
Soldier Systems Center*

Natick, Mass.— More space is what the Army wanted for their Tactical Operations Centers, and that's what it will get with the Large Standard Integrated Command Post System (LSICPS) being developed at the Soldier Systems Center. In fact, LSICPS is scheduled for initial fielding to the 3rd Stryker Brigade Combat Team in Alaska in 2004.

The new shelter will provide 450 square feet of space, nearly four times the size of the current Modular Command Post Tent System. The 21st Century Fabric Structures Team for Product Manager-Platforms and the Communications-Electronics Command in Fort Monmouth, N.J., are leading development of this new tent system.

The Soldier Systems Center tent prototype shop constructed the modified Tent Extended Modular Personnel (TEMPER), or LSICPS. The larger tent is a single, 24-foot section that reduces seams and the setup time required to connect three of the TEMPER's standard 8-foot sections. In addition, the TEMPER's fly was removed because heat-sealed, stitchless seams—used for the first time on this tent—close out moisture. An integral plenum for the heating, ventilation and air conditioning system and an integral liner for overhead lighting further simplify the modified system.

LSICPS also features an electrical distribution system, tables and map boards. Attached vestibule rings are included as anchor points when the protected pathway from the vehicle carrying the system is in place. If



Six people can set up the TEMPER Large Standard Integrated Command Post System in about 25 minutes.



selected, soldiers' familiarity with the TEMPER will shorten training time on setup for the LSICPS. Another advantage is that the TEMPER—and now the LSICPS—is supportable with spare parts through Defense Supply Center-Philadelphia, unlike commercial shelters.

Before making its recommendation, the Natick team searched the commercial market and received 10 proposals through a *Commerce Business Daily* request for shelter information. Of three proposals the team submitted for consideration, an air beam supported shelter and LSICPS were selected for full assessment. Also, a commercial "pop-up" tent and modified Modular General Purpose Tent System (MGPTS) were selected for further evaluation. All four shelters were independently tested at Aberdeen Proving Ground, Md., last fall, but only the LSICPS and MGPTS should meet the standards, according to Frank Kostka, 21st Century Fabric Structures Group team leader.



The TEMPER's fly was removed on the larger version (see outside view) because heat-sealed, stitchless seams, used for the first time on this tent, close out moisture. The larger TEMPER offers 450 square feet of space (see inside view) and includes an electrical distribution system, tables, maps and boards.



"Whether or not the {LSICPS} is the final selection, there's a strong possibility of incorporating it into the family of TEMPER tents," he said, which would add to the TEMPER's 20 present configurations.

At the battalion level and up, extra space for the command staff is in demand. The standard solution now is to join several of the current, smaller shelters.

"When you put four or five of the 11-foot by 11-foot {current, smaller} tents together, you get problems with leakage, and you can't access the roof to get the snow off of them," Kostka said.

Alternatively, units are buying commercial tents, many of which are incompatible with the military operations.

"Pop-up tents are quickly erected and look military, but they're too lightweight to withstand snow load testing and not rugged enough to pass durability testing," said Kostka.

Although designed to meet the load requirements, snow knocked the air beam tent out of contention when leakage occurred. Kostka said the lessons learned are useful in knowing what changes are needed to meet the requirements, and he anticipates the highly regarded air beam technology to be used in the future in command post and medical shelters.

"Everybody loves a tent that rolls out and sets itself up," he said. "Six people can set up the TEMPER in about 25 minutes while it takes the same number of people seven minutes with the air beam." He said users want simplicity, durability and fast setup in temperatures from -50 to 120 degrees Fahrenheit.

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ARDEC Showcases Advanced Lethality Projects at AUSA Symposium

By Bernard Reger

Armaments Research, Development and Engineering Center

Picatinny Arsenal, N.J. — The Armaments Research, Development and Engineering Center (ARDEC) showcased its Advanced Lethality projects at this year's Association of the U.S. Army Winter Symposium.

The ARDEC booth featured a 3D video created by the Ground Combat Simulation Team at the Fire Support Armaments Center. It was displayed on the new Virtual Theater and featured original artwork depicting Picatinny Arsenal systems in various battle scenarios created by retired employee Wayne Skyler.



ARDEC Commander Brig. Gen. Larry C. Newman and his aide, 1st Lt. Jacob Grabia, use the new Virtual Theater to watch a 3D presentation on the center's Advanced Lethality projects for the Future Combat System. **Photo by Dr. Bernard Reger.**

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Soldier feedback becomes part of the process to determine if an item should be fielded or if it still needs improvement.

Soldier Feedback Helps Improve Equipment

By Curt Biberdorf

Soldier Systems Center

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Natick, Mass. — The soldier shivering on guard duty left an impression on Dave Cheney, then a senior enlisted advisor, during a visit to Alaska in 1978 with a project engineer who was developing new load bearing equipment.

"I said to myself, 'This guy is freezing,'" Cheney recalled, the former Operational Forces Interface Group (OFIG) team leader at the Soldier Systems Center. "When I asked the {executive officer}, who was in a heated tent, if the cold weather was a problem for his troops, he said no. Then I knew we had to go to the soldier, the individual user to get accurate information."

Going to the soldiers for a firsthand account on the performance of items soldiers wear, carry or eat is the hallmark of OFIG since it was officially established in 1986.

Cheney said the Department of Army Materiel Development and Readiness (now Army Materiel Command) commander was concerned about getting soldier feedback on the items it issues and makes available to soldiers, so the Natick Research and Development Center director (now the Natick Soldier Center) established an office to obtain feedback.

Starting with one officer and one civilian employee, the office has grown to a staff of two enlisted advisors, three engineering psychologists, six equipment specialists, an exhibit coordinator, administrative assistant and team leader.

Routine Installation Visits

OFIG gains customer feedback through installation visits, user assessments and exhibits or technical displays. When called upon, quick reaction teams respond to deployed units needing immediate assistance.

The team initially visited four installations per year and has now expanded to as many as 10 visits annually, including at least one visit to a Navy, Air Force and Marine Corps base.

Within two weeks after returning from a major training exercise or deployment, soldiers gather to fill out surveys tailored to their type of unit and are interviewed to help determine the levels of functional performance and user satisfaction generated by items developed at the Soldier Systems Center.

"We tell them that they have an opportunity to make changes," said Max Biela, an equipment specialist. "We always say to be perfectly honest and to tell us why they like or don't like something."

Immediate Investigations During Wartime

Sometimes the feedback cannot wait, which is why since the Gulf War, OFIG has sent a team that can immediately investigate problems with equipment deployed around the world.

In several cases, OFIG equipment specialists, many with extensive military experience, have responded to a problem by escorting, sizing, fitting and issuing equipment needed in an emergency, along with providing necessary training.

During Operations Desert Shield and Desert Storm, for example, equipment specialists noticed many supplies were never distributed because shipping containers arrived without labels identifying contents or destination. Now, every shipping container is labeled with a bar code sticker to avoid confusion and delays.

In Macedonia, equipment specialists learned that soldiers were putting wood screws into the tread of their Intermediate Cold/Wet Boots for traction. However, the traction problem was due to using the wrong rubber composition. More recently, a team from OFIG traveled to Afghanistan to try to solve problems with cold-weather clothing in the mountain environment.

User Assessments Prior to Fielding

Well before any product is considered for fielding, OFIG assists project managers in locating units from a list of volunteers and coordinating user assessments. Once an appropriate unit has been identified, OFIG sets up the user assessment to minimize changes and disruptions to the unit-training schedule. OFIG works with the assigned evaluator from the Army Test and Evaluation Command to ensure the unit and equipment meets the criteria of the Operational Requirements Document and Test and Evaluation Master Plan, such as type of unit and climatic conditions.

Whether it's skis in Alaska, boots in Panama or a new military ration entrée in Texas, anything from prototypes to finished products are subject to evaluation. Soldier feedback becomes part of the process to determine if an item should be fielded or if it still needs improvement.

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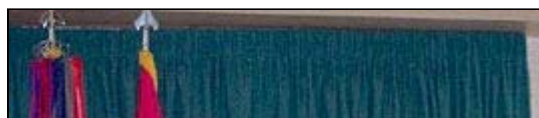
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AUSA President Visits Picatinny Arsenal

By Myra Hess

U.S. Army Armament Research, Development, and Engineering Center

Picatinny Arsenal, N.J. —
Retired Gen. Gordon R.
Sullivan, Association of the



U.S. Army (AUSA) president and CEO, recently visited Picatinny Arsenal to describe AUSA's current objectives, Army Transformation and

Picatinny's role in providing the latest and most advanced weaponry for soldiers.

Retired Army Gen. Gordon R. Sullivan (center), AUSA president and CEO, presents a plaque to Spc. Yohannis Selassie (left), Garrison chaplain assistant, on the occasion of his being named Picatinny/Tank-Automotive Armaments Command Soldier of the Quarter. Installation Sgt. Maj. Delatha Bell (right) also participated in the presentation.

Photo by Jack Crowley.

Sullivan, 65, was the Army's vice chief of staff during Operation Desert Storm, the second highest-ranking soldier in the Army. He spoke to a group of more than 120 people about a variety of Army-related topics, including future weaponry, much of which is being researched and developed at Picatinny.

Sullivan praised Army and civilian personnel, saying they are the backbone and support for other branches of the military. He expressed his hope that the Army would bolster its number of active troops by 50,000 to reach 535,000 active soldiers.

The general also honored the Picatinny/Tank-Automotive and Armaments Command Soldier of the Second Quarter, Spc. Yohannis Selassie, with a plaque, his autographed book and a chapter president coin. Selassie is Picatinny's Garrison Chaplain assistant.

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Intelligent Power Management System Prioritizes Power Requirements

*Communications-Electronics Research, Development and Engineering
Center*

Fort Monmouth, N.J. — As the needs and requirements of the future battlefield are analyzed, there are few warfighting or sustaining base systems that do not require electrical power. The Army's challenge is to develop an integrated power supply system that meets requirements while minimizing weight and cost. To meet this challenge, the Communications-Electronics Research, Development and Engineering Center (CERDEC) initiated research on the Intelligent Power Management System (IPMS).

Origins of Electrical Challenges

Historically, electrical requirements were individually identified, and the power source requirements were based on the peak power demands of all systems combined. This resulted in building/fielding electrical power systems that often exceeded operational requirements, which increases costs and presents logistical challenges for the warfighter.

For example, using too many generators or generators that are too large increases the weight on the soldier and the platforms. Furthermore, additional generators would need to be purchased and fielded due to "wetstacking," which occurs when the generator's electrical load falls below 50 percent of the rated load, thus reducing the generator's life expectancy.

IPMS: Meeting the Warfighter's Power Requirements

The need for IPMS is evident as the Army continues to move towards more advanced capacity combat vehicles, electronically laden shelters and C4ISR platforms. Army power sources cannot continue to be "up-sized" to meet higher peak power demands when weight, platform footprint, fuel and logistics are considered. The IPMS allows for the power source to be sized for the average system power requirement by providing real-time load management and prioritization.

CERDEC researched the ability to reduce total electrical requirements by actively managing the system's electrical power requirements. IPMS prioritizes electrical power requirements, ensuring that critical systems are provided power while less critical systems are shut down if overall electrical demand exceeds supply. This process eliminates the "on/off" type load where a circuit breaker blows and eliminates the system's electrical power.

The technology is intended for integration on various Standard Integrated Command Post System platforms, such as the V4/V5 Rigid Wall Shelter, Soft-top HMMWV, 5-Ton Expandable Van, Large Tent and the M1068 tracked vehicle. At the end of this engineering program, the IPMS will be ready for integration into new or fielded command post system platforms.

For more information about IPMS, please contact Don Kaw, CERDEC Command and Control Directorate, at (732) 532-4007 or Donald.Kaw@mail1.monmouth.army.mil. Please contact Gregory Fiske at (732) 427-2739 for information about the platform applications.

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Edgewood Center's New Decontamination Device Deployed

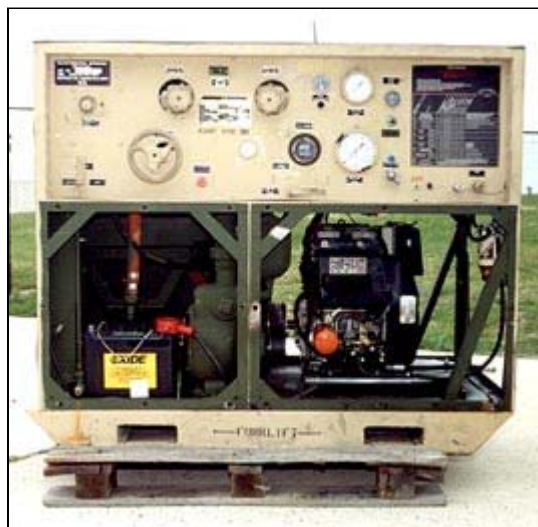
Edgewood Chemical Biological Center

Aberdeen Proving Ground, Md. — Dozens of the newly modernized M12A1 large-scale decontamination devices have been deployed to the Gulf in recent weeks. Edgewood Chemical Biological Center (ECBC) engineers were able to redesign the device and deploy the first 56 units only six months after the Pentagon requested the modification. Normally, it would take a minimum of several years to design and field a decontamination system.

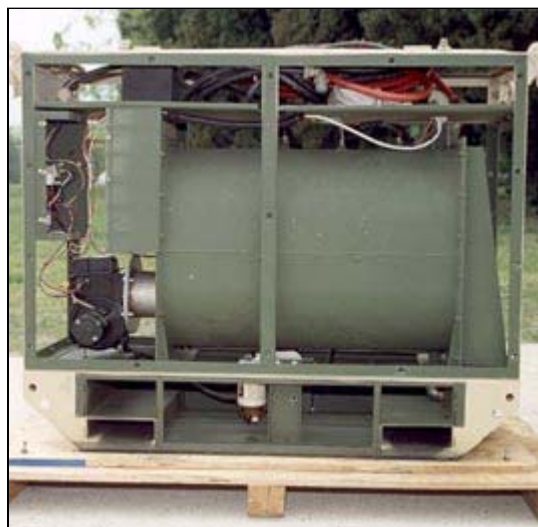
Responding to M12 user feedback, ECBC engineers redesigned the 35-year-old M12 Decontamination System to create a lighter, more efficient and reliable model. Demetrios Prapas, ECBC Decon/Smoke team leader, said that with some retrofitting, the M12A1 met the Pentagon's immediate need for a deployable large-scale decontamination device to support troops in the Gulf.

Prapas' team replaced the gasoline engine with a modern diesel engine, simplified and modernized the system's controls, and replaced the burner unit to increase system performance. Since the diesel engine and the burner both operate on diesel fuel, only one fuel tank is necessary to supply fuel to the system's pump and boiler units. The diesel engine's operating efficiency is improved, thus increasing the M12A1's operating time before refueling is necessary. ECBC partnered with a Pine Bluff, Ark., production facility and personnel at Rock Island, Ill., in order to modernize the system and meet the Army's deployment deadline.

"Upgrading the M12A1 instead of designing a new system made sense," Prapas said. "There's no training impact on troops, no learning curve and



ECBC upgraded and improved the M12 Decontamination System, and the new version was deployed only six months after the Pentagon requested a lighter, more efficient model to support troops in the Gulf.



less logistics burden."

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"You can see the evolution of vehicle concept designs, and at the same time, brainstorm how Army technologies fit into these designs before prototypes are built or tested."

Kenneth J. Ciarelli,
associate director of
TARDEC's ACE Lab

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TARDEC Unveils New Virtual Concepts at Winter Symposium

Tank-Automotive Research, Development and Engineering Center

Warren, Mich. —Just as snow birds flock south each year, thousands of the Army faithful convene each February in Fort Lauderdale, Fla., to discuss the Army's priorities at the Association of the U.S. Army (AUSA) Winter Symposium.

This year, they came, they saw and they got ACE'd courtesy of the Tank-Automotive Research, Development and Engineering Center (TARDEC) interactive collaboration technologies booth. TARDEC's Advanced Collaborative Environments (ACE) Lab unveiled the first Future Combat Systems (FCS), Future Tactical Truck System (FTTS) and Hit Avoidance virtual concepts for Army cadre and other attendees.

"These virtual design tours are the first time that warfighters, combat developers and key Army decision makers can see some of the FCS and FTTS advanced concepts," said Kenneth J. Ciarelli, associate director of TARDEC's ACE Lab. "You can see the evolution of vehicle concept designs, and at the same time, brainstorm how Army technologies fit into these designs before prototypes are built or tested."

TARDEC's ACE Lab is a lightning rod for revolutionizing the Army's system development and acquisition processes. Through ACE's virtual worlds and web-based information technologies, the Army reduces cycle time and delivers advanced capabilities to the warfighter. Using virtual reality and web-based collaborative environments, TARDEC's customers can easily communicate while resolving design issues. The ACE Lab's high-end visualization tools, combined with interactive Internet technologies, allow users to evaluate design tradeoffs, space claims, form, fit, function, safety and maintenance issues.

The ACE lab's partners include TARDEC's Advanced Concepts and Hit Avoidance Teams, the Army's Program Management Office for Future Combat Systems, PTC, United Defense Limited Partnership, General Dynamics Land Systems and Boeing.

Virtual Tours Highlight TARDEC Display

On the AUSA exhibit floor, the ACE Lab and its



partners held immersive FCS, FTTS and TARDEC Hit Avoidance concept design tours during which

Army notables like Assistant Secretary of the Army (Acquisition, Logistics and Technology) Claude Bolton, Chief of Staff Gen. Eric K. Shinseki, Objective Force Director Lt. Gen. John Riggs and many others were able to "kick the tires" in virtual reality. Similarly, they could evaluate vehicle designs from laptop computers using web-based collaboration tools.

Michael Cadieux, ACE Lab engineer, briefs Dr. Mike Andrews, the Army's chief scientist, on one of the ACE Lab's latest interactive collaboration tools aimed at capturing and managing user feedback.

Mark Feury of TARDEC's Advanced Concepts Team demonstrated one of several FTTS Maneuver Sustainment Vehicle options, which include variable height suspension, potable water generation from engine exhaust, hybrid-electric drive propulsion and an "intelligent" material-handling device.

The ACE display was also a platform for TARDEC's Survivability Team to show off its Full Spectrum Active Protection System. According team representative Starlett Burrell, the system detects, tracks, intercepts and physically defeats large-caliber threats at a distance. The design will provide FCS hemispherical protection against large-caliber antitank threats.



Ted Poucher, United Defense, briefs Gen. Eric Shinseki, Army chief of staff, TARDEC Associate Director for ACE Ken Ciarelli, and Lt. Gen. John Riggs, director of the Objective Force Task Force, on a nonline-of-sight FCS cannon concept in the ACE Lab's portable immersive visualization device.

Burrell and teammates Steve Caito and Jim Soltesz also rolled out the FSAP Close-In Layered Shield, which can complement a long-range system or serve as stand-alone protection for extremely close-in attacks.

TARDEC Teams with AMC to Display Top Technologies

In partnership with TARDEC's parent organization, the Army Materiel Command, researchers attracted interest at the AUSA Winter Symposium with two top TARDEC initiatives—Vehicle Active Protection and the Omni-



Directional Inspection System robot.

Winter AUSA attendees learned that TARDEC's Omni-Directional Inspection System, seen here in a recent field test, would greatly reduce the number of personnel needed for under vehicle security inspections.

Viewing an interactive animated movie, symposium guests learned how the system operates and discovered the high level of cooperation required among the Army's Research and Development Centers to foster a successful program. While watching the animation, attendees were impressed to see how an active system protects against large caliber threats without the traditional vehicle weight burdens, enabling a survivable but rapidly deployable lightweight vehicle.

Using the TARDEC High Performance Computing VisionDome, the audience was embedded in a virtual reality environment. The VisionDome simulates a 180-degree field, enabling Army and industry leaders to interactively view a potential FCS vehicle equipped with an active protection system. Attendees used a simulator to drive the vehicle into the battle space. Once the vehicle arrived at its objective, audience members learned how the Active Protection System detects, tracks, intercepts and physically defeats large caliber threats at a significant distance from the defended vehicle.

AUSA members were equally impressed with TARDEC's latest homeland security program, the Omni-Directional Inspection System (ODIS). ODIS is a small, low profile Tele-operated video inspection robot that is ideal for under vehicle security searches. Conference attendees were able to search a mock-up vehicle undercarriage with ODIS and then observe what the robot is "seeing" on a nearby video screen. Attendees also interacted with a computer simulation ODIS program that soldiers will use for training in advance of receiving the actual robot.

According to ODIS engineer William Smuda, "ODIS is operable in wet and dry environments, during day and night operations and has thermal imaging capabilities. We can also outfit the robot with nuclear, biological and chemical sensors."

ODIS will greatly reduce the number of personnel needed to perform vehicle searches, which currently are accomplished using under vehicle mirror searches, as well as enhance efforts to find contraband in all operational conditions. ODIS is ready for procurement, and, if mass produced, units could cost as little as \$8,000 each.

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completing the new concept in warfighting, and our affiliation with institutes of higher learning will enable us to bring this vision into being.

Philip Brandler, Natick Soldier Center director

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Natick Solider Center Renews Partnership with UMass

*By Curt Biberdorf
Soldier Systems Center*

Natick, Mass. — The Natick Soldier Center (NSC) and University of Massachusetts (UMass) recently extended their relationship through a Memorandum of Understanding (MOU). UMass President William Bulger and NSC Director Philip Brandler signed the document, which renews the agreement for a cooperative working relationship in areas of mutual interest until Dec. 31, 2004.

"If a renewal of vows were a sign of a successful marriage, the renewal vows here are a symbol of a successful marriage between the NSC and UMass," Brandler said. According to the agreement, both parties will work together to investigate, develop and commercialize appropriate concepts, technologies and products related to the individual warfighter or equivalent civilian personnel engaged in high-risk occupations.

"The whole world has changed since the first signing," Bulger said. "This country catastrophically changed on Sept. 11, 2001. We learned a new imperative to help improve domestic safety. It's not just military but nurses, police officers and firefighters."

Several new initiatives arrive with the new MOU. The Student Work Experience Program will pay UMass students to work on projects when school is not in session. The program adds to the existing Career Related Experience in Science and Technology, cooperative education and intern positions for UMass students. The NSC currently employs 72 UMass alumni, which is 15 percent of its work force.

NSC employees also will be able to take advantage of business courses offered through UMass online education to help them meet the requirements for membership in the Army Acquisition Corps. UMass/NSC working groups will be established and meet quarterly to discuss partnering opportunities.

In addition, NSC will offer UMass-Dartmouth dyeing, printing and finishing machinery to support textile research and development. At UMass-Lowell, a contract will enable research and development of flexible solar cells for soldiers. Overall, the NSC provides more than \$1 million per year to UMass.

"We're looking forward to completing the new concept in warfighting, and our affiliation with institutes of higher learning will enable us to bring this vision into being," Brandler said.

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Edgewood Center Receives Several Awards

Edgewood Chemical Biological Center

Aberdeen Proving Ground, Md. — The Edgewood Chemical Biological Center (ECBC) recently received several prestigious awards for its efforts to protect the warfighter through advanced technologies in chemical and biological defense.

Zarzycki Named Lab Director of the Year

The Federal Laboratory Consortium (FLC) selected ECBC Technical Director Jim Zarzycki as the Laboratory Director of the Year for 2002.

"The selection process is extremely competitive, and we all deserve to be proud of this honor," said Zarzycki. "It is the cooperation and hard work of each of our directorates that has allowed our organization to win this prestigious award."



ECBC Technical Director Jim Zarzycki (left) is named Laboratory Director of the Year for his contributions to the transfer of technology from federal laboratory to industry.

Since Zarzycki became technical director in 1998, ECBC's technology transfer program has grown from 11 active Cooperative Research and Development Agreements to 43 active agreements, 11 patent license agreements, 24 new test service agreements and 26 agreements with other government agencies.

With this annual award, the National Advisory Council of the FLC honors a laboratory director who has made outstanding contributions to the overall enhancement of technology transfer for economic development. Accomplishments related to the transfer of technology from the federal laboratory to industry, including support of FLC activities, internal accomplishments, industry involvement and community service, are the primary award criteria.

Two Projects Receive Excellence in Technology Awards

Two ECBC projects recently won awards from



the Federal Laboratory Consortium (FLC) for exemplary work in

The Federal Laboratory Consortium recognizes ECBC's mobile laboratory (pictured) and the center's antibody expression project for their applications to commercial enterprises.

furthering technology transfer. The projects, known as "Design, Development, Training, Fielding and Continued Consultation for Mobile Laboratories" and "Antibody Engineering for Expression in Insect Cells and Larvae," received two of only 22 awards distributed nationwide by the FLC.

The mobile laboratories and systems will help integrate and standardize field sampling and analysis technologies supporting civilian first responders, military leaders and federal agencies when responding to chemical, biological and radiological terrorism worldwide.

The antibody expression project addresses the need for an advanced method for manufacturing recombinant proteins in insect cells and larvae. This technology allows for study of the impact of biological threat agents on gene expression utilizing cells derived from insect larvae, which exhibit responses more similar to animal cells than do bacterial cells.

Biosensor and Molecular Engineering Teams Receive Achievement Award

ECBC's Biosensors Team and the Molecular Engineering Team recently received the U.S. Army Research and Development Achievement Award for their advancements in biological threat agent detection technology.



The teams were honored for their work on a research project entitled "Real-Time Fluorogenic PCR Assays to Detect and Identify the

ECBC's Biosensors Team (members pictured) and Molecular Engineering Team receive honors for their work to advance biological agent sampling and detection technologies.

Biological Threat Agents." This project is advancing ECBC's extensive work in sampling and detection technologies for biological agents.

These gene probe-based assays were developed to detect the presence of multiple agent-specific marker genes. Since 1999, the Biosensors and the Molecular Engineering Teams have transitioned a total of 25 different assays to the Department of Defense database for primers and probes for biodefense. They can be easily transitioned to any nucleic acid-based sensor for field operation.

"We are extremely proud of these teams and their work," said Jim Zarzycki, ECBC technical director. "The Army R&D Achievement Award is a great honor and is well deserved."

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AMRDEC's Prototype Integration Facility Streamlines Acquisition

*By Jim Bowne
Aviation and Missile Command*

Huntsville, Ala. — In today's volatile environment, program managers continually face the challenges that are associated with acquisition planning, implementation and execution of rapid development and deployment of weapon systems.

Shrinking budgets, reduced resources and increased operational performance requirements force the Department of Defense acquisition community to continue evolving just to keep pace with the ever-changing environment. Compounding this growing challenge is the Army's transformation to a lighter, more flexible and more rapidly deployable force.

According to Devin Whitaker, the Aviation and Missile Research, Development and Engineering Center (AMRDEC) went on the offensive to meet the challenges. "In FY00, AMRDEC researched potential non-traditional acquisition alternatives to combat the emerging requirement to get weapon systems capability to the warfighter in less time, at less cost and with reduced risk," he said. Whitaker is the Business and Financial manager of AMRDEC's Prototyping Integration Facility (PIF).

This proactive stance led the AMRDEC Engineering Directorate's



The Blue Force Tracking-Aviation (BFT-A) system is being installed and integrated onto a UH-60 Black Hawk. The Prototype Integration Facility has produced and fielded more than 200 BFT-A systems in less than six months.

leadership to assess the feasibility of combining existing electronic design and analysis, mechanical and electrical prototyping, platform integration, and rapid response capabilities under one organizational element. Because of AMRDEC's strategic focus, the Dr. Larry O. Daniel Prototype Integration Facility was officially dedicated and chartered for operations on July 22, 2002.

Prototype Integration Facility Promotes Agility

The PIF is a Government Owned, Government Operated facility/concept concentrated on meeting the rapid response needs of the Department of Defense, and most notably the weapons systems supported by the U.S. Army Aviation and Missile Command (AMCOM). The PIF headquarters is located at Redstone Arsenal, Ala.



"What the PIF brings to the table is the effective use of a government to

Prototype Integration Facility representatives and Lower Tier Project Office leadership discuss the facility's progress on the Patriot Battery Command Post Program.

government interface via the Government Owned, Government Operated PIF operations," said Steve Cosgray, a procurement analyst in the Apache Project Management Office. "Yet, it is uniquely designed to interject strategic partnerships with small businesses, small disadvantaged businesses and other industry partners to render a true rapid response, turn-key capability."

Contracting Vehicle Facilitates Rapid Acquisition

To augment existing in-house government expertise and capabilities, on June 17, 2002, AMCOM's Acquisition Center awarded a 10-year, \$1.1 billion contract to Joint Venture Yulista Science and Engineering Services, Inc. The contract, known as JVYS, is referred to as AMCOM's PIF Rapid Acquisition and Prototyping (RAP) contract.

The PIF organizational structure and PIF RAP contractual vehicle offer virtually unlimited programmatic



flexibility and embrace acquisition streamlining and acquisition reform methodologies. The PIF RAP contract is a rapid response contract vehicle

that gets hardware, software, and new technology into the warfighter's hands quickly. The PIF operational and organizational concept offers program and project manager's choices when developing weapons systems acquisition strategies.

The Prototype Integration Facility is partnering with Armaments Research, Development and Engineering Center to create an AH-1Z simulator for the U.S. Marine Corps.

Facility Supports Small Business Community

JVYS is a joint venture of Yulista Management Services Inc., which is an eligible section 8(a) company owned by Calista Corporation (an Alaska Regional Native Corporation) and Science and Engineering Services, Inc, a small disadvantaged business. The JVYS's primary operation is located in Huntsville, Ala.

During the first 120 days following the award of the PIF RAP contract, the organization experienced a substantial 616 percent growth over fiscal year 2001 business base and continues to steadily increase. One of AMCOM's primary goals is to offer partnering opportunities that retain Army funding in the local Huntsville and Redstone Arsenal community.

"The PIF has been very successful in leveraging the local capabilities within the small and disadvantaged business community," Whitaker said. In fact, about 89 percent of current PIF RAP contract obligations have remained with small business.

"This type of government and industry partnership facilitates an environment that embraces the entrepreneurial spirit of small business firms," said Mit Merritt, chief of Redstone Arsenal's Office of Small and Disadvantaged Business Utilization. "Industry, and specifically the small business community, will continue to play an integral role in this process."

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Edgewood Center Researchers Secure Bio Detection Patent

Edgewood Chemical Biological Center

Aberdeen Proving Ground, Md. — Edgewood Chemical Biological Center (ECBC) researchers recently secured a patent for a process that can be utilized in detecting biological weapons, a technology area that is critical to protecting warfighters in hostile battlefield situations.

"This patent represents the hard work and dedication of our employees," said Jim Zarzycki, ECBC technical director. "We expend serious amounts of effort to build our nation's chemical and biological defense capabilities. This patent is proof of our solid, novel approaches."

The patent is for "methods and apparatus for detection lesion-induced resonances in deoxyribonucleic acid via millimeter or submillimeter wave spectroscopy." It describes a new spectroscopic method for the diagnosis of DNA damage.

Scientists from the center's Research and Technology directorate partnered with personnel from the Army Research Office and the Stephens Institute of Technology in the work leading to this patent.

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Picatinny Partners with United Defense Industries

By Elaine Serao

Armaments Research, Development and Engineering Center

Picatinny Arsenal, N.J. — Armaments Research, Development and Engineering Center (ARDEC) and United Defense Industries, Inc., will team to develop technologies that will make future armaments systems lighter, more precise, more lethal and easier to deploy.



"Partnering agreements, such as this one, provide a mechanism for the Army

and industry to work closely in the development of new technologies," said ARDEC Technical Director Mike Devine during the signing ceremony.

ARDEC Technical Director Mike Devine and United Defense Industries, Inc., CEO and President Tom Rabaut sign a Cooperative Research and Development Agreement. **Photo by Todd Mozes.**

Cooperative Research and Development Agreements are based on open government and industry communications in an integrated team approach to program management, which promotes common goals and streamlines acquisition.

"I'm extremely pleased about this agreement," Devine said. "It will give both partners the opportunity to work closely in accelerating the process

of developing and fielding technologies for the Army Transformation."

The first collaborative effort under this agreement will focus on the reactive armor system for the Stryker family of armored vehicles. Other planned efforts will involve advanced armaments systems, fire control, ammunition, protection systems, logistics and manufacturing technologies for the Objective Force.

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Edgewood Center Launches Web-Based Employee Newsletter

Edgewood Chemical Biological Center

Aberdeen Proving Ground, Md. — The Edgewood Chemical Biological Center (ECBC) launched its new employee "e-letter" in March. Called the *Edgewood Source*, the e-letter is designed to provide a critical communications channel for ECBC's 1,000 employees, many of who are spread among various facilities in Edgewood and other sites out of state.



ECBC employees can keep updated on the center's latest news and developments thanks to a new electronic newsletter, called *Edgewood Source*.

In the *Edgewood Source*, staff can read about work that's happening in other parts of the center and in other organizations on post. Employees also have access to the latest information from the Human Resource Office, and can review awards, retirements, hirings and other staff information. The *Edgewood Source* is available on ECBC's intranet, known as CB Net, and a monthly email with links to new information is distributed to all ECBC sites.

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Maj. Gen. John C. Doesburg—RDECOM Transition Director
Miguel Morales—Chief, Public Affairs Office/G-5

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